

On the record of alfonsino *Beryx splendens* (Berycidae) in Sardinian seas (central-western Mediterranean)

by

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RÉSUMÉ. - Signalement d'un spécimen d'alfonsino, *Beryx splendens*, au large de la Sardaigne.

Un spécimen mâle adulte d'alfonsino *Beryx splendens* a été capturé au large du cap Carbonara (SE Sardaigne, Italie) en novembre 2009. Cette capture représente le deuxième signalement dans les eaux italiennes. Les données morphométriques, et méristiques des spécimens recueillis sont fournies.

Key words. - Berycidae - *Beryx splendens* - MED - Sardinian seas
- New record.

The genus *Beryx* comprises two species, *B. decadactylus* and *B. splendens* Lowe, 1833. Both are widespread in the Atlantic, Indian and Pacific oceans and, where abundant, are the subject of commercial fisheries (Busakhin, 1982; Heemstra, 1986; Maul, 1981, 1986, 1990). Adults are bathypelagic, usually on continental slope, oceanic ridges or sea-mounts at depth > 200 m.

The alfonsino *B. splendens* Lowe, 1834 has a worldwide distribution in temperate and tropical waters (see Nielsen, 1973;

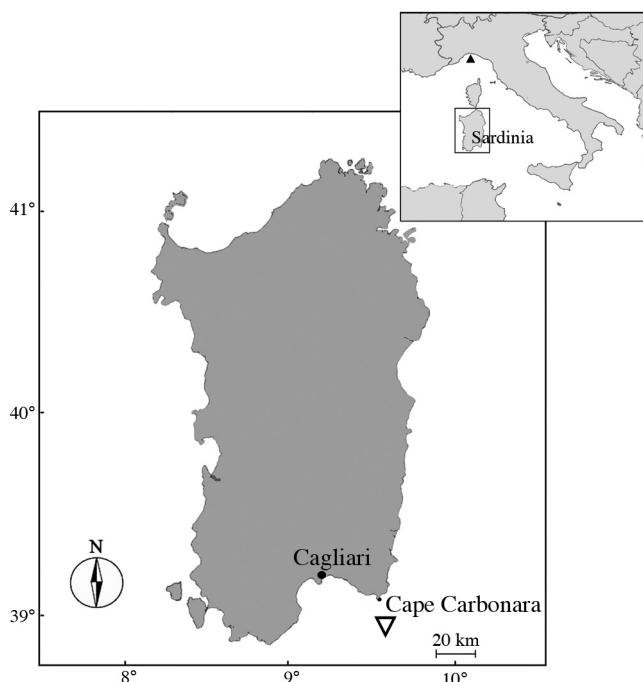


Figure 1. - Map of the Mediterranean showing the previous record (▲) and the new record in Sardinian waters (▽) of *Beryx splendens*.

Table I. - Morphometric and meristic data for the male specimen of *Beryx splendens* found off the South-Eastern Sardinian seas (as absolute values and percent of standard length).

Measurements (mm)	
Total length	451
Fork length	414
Standard length (SL)	375
%SL	
Pre-anal length (PAL)	50.13
Pre-dorsal length	41.07
Head length	33.33
Body depth	33.87
Eye diameter	16.00
Dorsal fin length	20.27
Anal fin length	21.60
Counts	
Dorsal fin	IV+15
Anal fin	IV+28
Pectoral fin	18
Pelvic fin	I+2
Scales in the lateral line	70

Maul, 1981, 1986, 1990; Busakhin, 1982; González *et al.*, 2003 for detailed distribution). In the Mediterranean Sea, there is only one confirmed record of this species, with a specimen caught in April with a bottom trawl at a depth of 630-640 m, in the Gulf of Genoa (Ligurian Sea) (Orsi-Relini *et al.*, 1995). No information on sex and feeding ecology for this record was reported [31.5 cm in fork length (FL)].

The present paper reports the first record of one adult of *B. splendens* [414 mm in fork length (FL)] in Sardinian waters, complemented with biological data obtained for the first time for the Mediterranean Sea. The specimen was caught during a commercial bottom trawl hauled in daytime between 500 and 600 m of depth off Cape Carbonara (South-Eastern Sardinia) on 27 November 2009 (Fig. 1). It is preserved in the ichthyological collection of the Department of Animal Biology and Ecology of the University of Cagliari (registration code DBAE 08965) (Fig. 2A).

Meristic and morphometric data reported in table I are in agreement with Busakhin (1982) and Maul (1986).

The specimen was weighed (1077.72 g) and sex and maturity stage were determined macroscopically according to González *et al.* (2003). In order to observe the gonadal development, a piece of tissue from the middle region of the gonad was cut, fixed in 5%

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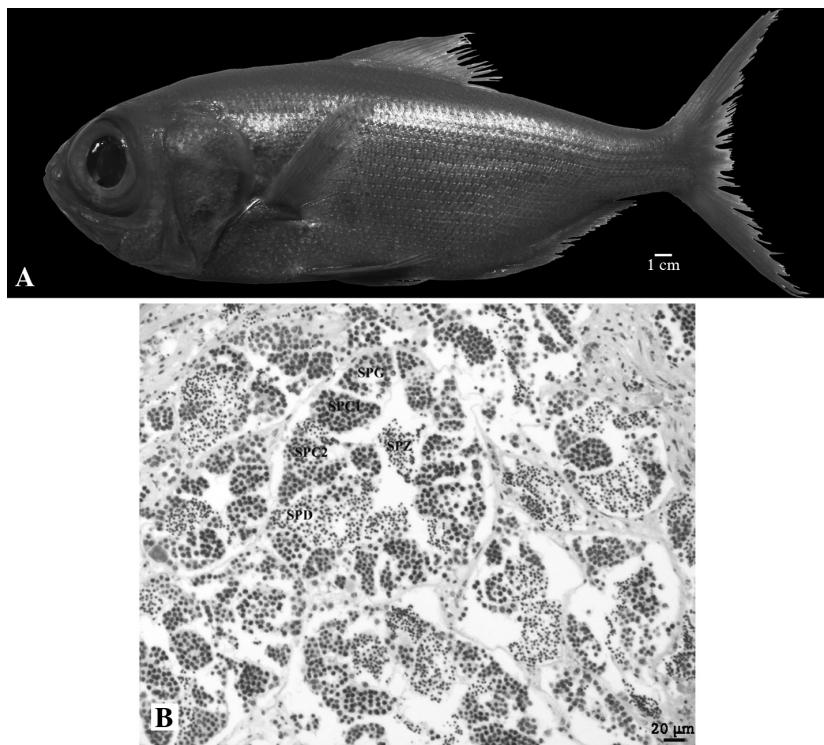


Figure 2. - A: Specimen of *Beryx splendens* (414 mm FL) from South-Eastern Sardinia. B: Histological section of the testis illustrating spermatogenesis (SPG, spermatogonia; SPC1 and SPC2, primary and secondary spermatocytes; SPD, spermatids; SPZ, spermatozoa).

seawater solution of formaldehyde and processed for histological analyses. Transverse sections (3 μ m) were stained with Hematoxylin and Eosin.

The specimen was a resting male (Stage II) with both testes elongated, whitish, fan-shaped and equally well developed. From the histological point of view, the gonads showed an active spermatogenesis, in which all germinal stages were present (except for the spermatozoa), with the spermatogonia distributed along the entire length of the seminiferous tubules (Fig. 2B) thus confirming the macroscopic stage.

According to the observations made by González *et al.* (2003) in the eastern-central Atlantic (size of first maturity between 230 and 303 mm FL), the specimen reported here may probably have spawned during the summer.

The analysis of gut content (each single item identified to the lowest taxonomic level possible) revealed 8 undamaged specimens of *Sergia robusta* (Crustacea, Sergestidae) and the beaks of 10 cephalopods belonging to *Histioteuthis* sp. The high number of cephalopods remains and mesopelagic decapod crustaceans are in agreement with the observations by Dürr and González (2002) for the eastern-central Atlantic.

The finding of another specimen in the Mediterranean Sea, fifteen years since the first record (Orsi-Relini *et al.*, 1995), may indicate that this is a 'vagrant fish', not representing a tendency to an establishment. The presence of solitary specimens found at great distance from their normal geographical distribution has been documented for other species (Dulčić and Golani, 2006). Even if this record represents an isolated and sporadic event, it has to be unnoticed because it could be related to the general global changes

occurring in the last years such as the warming of Mediterranean waters (Francour *et al.*, 1994). Due to the fact that geographical distribution of the Indian Ocean population of *B. splendens* does not include the Red Sea, it is unlikely that the specimen entered the Mediterranean Sea via the Suez Canal. The most likely explanation is that it has entered the Mediterranean Sea through the Gibraltar Strait, as proposed by Orsi-Relini *et al.* (1995) for the same species.

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